

ZF 104CARD/EV

*Network-ready
embedded systems computer
based on the OEMmodule™*



*100MHz 486SX motherboard in
PC/104 CPU package*

10BaseT Ethernet interface

*SVGA display controller
supporting flat panel displays*

CompactFlash socket

Floppy disk and EIDE controllers

*Two RS232C serial ports: one
selectable as RS232 or RS485*

One parallel port

Rapid integration:

Proven PC compatibility

Standard motherboard feature set

Expert technical support

The ZF 104Card/EV is a network-ready, full-function 486 motherboard in a PC/104-compatible form factor. We've combined our award-winning OEMmodule™ Single Component Computer with 10Base-T Ethernet and VGA controller to create a compact 3.6" x 3.8" single board computer ideally suited for network applications.

Complete Feature Set

The ZF 104Card/EV contains all standard PC/AT motherboard functionality including serial and parallel I/O, floppy and EIDE disk controllers, an SVGA display controller for flat panel support, user-available internal flash, CompactFlash socket, PC/104 expansion bus, AT-compatible BIOS, Caldera DR-DOS™ (preloaded), and General Software's Embedded DOS-ROM™.

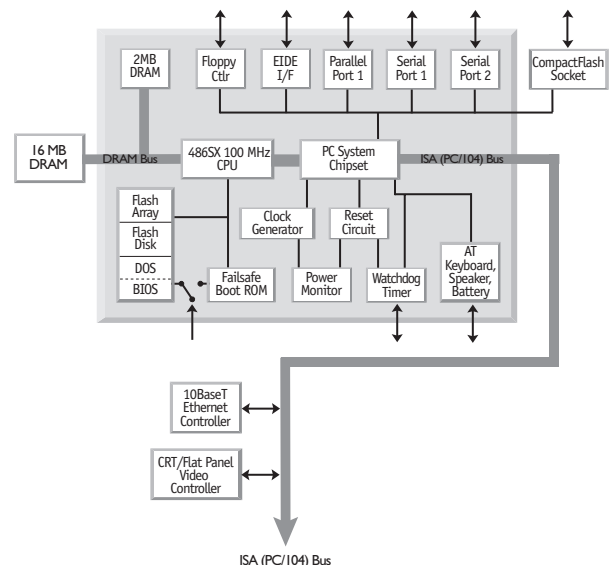
Quicker design cycle, shorter time-to-market

Easily integrate the widest selection of low-cost hardware peripherals by attaching PC/104 expansion modules directly to the board via the PC/104 expansion bus. The PC/AT ROM-BIOS and DOS enable you to develop software on your desktop PC then easily transfer your development work to the embedded system with little or no modification. Or you

can develop your application software directly on the ZF 104Card/EV.

Based on the OEMmodule Single Component Computer

The OEMmodule SCC combines PC-compatible system hardware, software and solid state mass storage in a single compact device the size of a large integrated circuit. This unique 2.2 inch by 3 inch chip-like design makes the OEMmodule SCC ideal for applications that require PC compatibility, low power consumption, high reliability and a small overall product size.



The Inside Choice for Embedded Control

SPECIFICATIONS

ZF 104Card/EV Features

486SX-100MHz CPU

- Full 32-bit internal architecture.
- Cost-effective 16-bit external bus.
- Virtual memory, paging and hardware enforced protection.
- Physical memory space up to 32 MB.

DRAM Controller Supports

- High-performance MUXed DRAM interleave, CPU pipelined operation.
- 2MB DRAM in the OEMmodule and 16MB additional DRAM soldered on board.
- Shadow RAM.
- Multiple context EMS support.

PC Core Logic with PC/AT Compatibility

- DMA controllers.
- Interrupt controllers.
- Timer/counters.
- AT keyboard controller.
- Realtime clock.

ISA Bus

- Compliant with standard PC/AT expansion bus with an IRQ and DMA channel subset.
- Supports PC/104 implementation.

Fail-safe Boot ROM™

- Embedded ROM.
- Boot to a pre-determined, factory defined state regardless of the internal BIOS flash memory's condition.
- Full flash memory restore functionality via the serial port.
- Recover easily from the corruption or loss of CPU boot data.

Ethernet Controller

- 10BaseT (twisted-pair), 10M bits/s.
- IEEE 802.3 and Ethernet standards.
- Supports AUI to external 10Base2, 10Base5, 10BaseT, or 10BaseF MAU.
- LNKST and RCV LED verification.
- Network Boot PROM capability.
- Supports Microsoft's Plug and Play System configuration.
- NOS support, including Novell Netware, Microsoft Windows 95 and LAN Manager, SCO UnixWare, IBM LAN Server, SunSoft PC NFS and Solaris, Artisoft LANtastic, Banyan Vines.

Serial Ports

- Two 16550-compatible serial ports: one port selectable as RS232 or RS485.

Parallel Port

- One fully-compatible PC/AT parallel printer port, plus bi-directional operation (ECP/EPP).

CRT/Flat-Panel Controller

- Chips And Technologies 65545 Flat Panel/CRT GUI accelerator.
- Fully compatible with VGA standard.
- Hardware windows acceleration.
- 512K byte video memory.
- Supports non-interlaced CRT monitors with resolutions up to 1024 x 768 x 16 colors and 800 x 600 x 256 colors.
- True-color and Hi-color display capability with flat panels and CRT monitors up to 640 x 480.
- Direct interface to color and monochrome Dual Drive (DD) and Single Drive (SS) STN and TFT panels.
- Supports 8 to 24-bit data interfaces.
- Power-sequencing controls for Vdd, Vee, and +12V to inverters.
- Flat-Panel (3.3V and 5.0V) option.

Floppy Disk Controller

- Software compatible with 765B controller.
- Integrated digital data separator capable of data transfer rates up to 2Mbps.
- Requires no external components.

EIDE Hard Drive Interface

- Full 40-pin interface to standard EIDE hard disk drive.
- Up to two EIDE drives (master/slave).
- Supports CompactFlash™.
- Floppy connector is a mini-connector which requires special cable.

Solid State Flash Memory Devices

- 2MB Internal Flash Memory.
- 1.4MB resident flash disk (RFD) available for DOS and OEM software use - normally the boot drive.
- Expandable by adding 2MB to 60MB of CompactFlash.

Watchdog Timer

- Programmable tickle sources.
- Automatic reset or NMI (jumper selectable) if user application goes out of control.

Power Monitor

- Brownout protection - settable voltage threshold. Reliable reset signal if power fluctuates.

PC BIOS

- Standard AT BIOS functionality.
- Supports OEM add-ons and customization.
- **SETUP** information stored in non-volatile flash EPROM allows battery-free operation.

Electrical Specifications

- 5 volt only $\pm 5\%$ operation
- Requires 5VDC @ 1.3A (estimated)

Mechanical/Environmental

- **Size:** 3.6" x 3.8" (91.6mm x 96.7mm)
- PC/104 bus header.
- Standard ribbon cable connectors.
- Mini 21F connector for floppy requires special cabling.
- Optional flat panel display support.
- **Operating temperature:** 32°F to 158°F (0°C to 70°C) Extended temperature range available. Contact factory for additional information.
- **Storage temperature:** -67°F to 212°F (-55°C to 100°C).
- **Relative humidity:** 5% to 95% non-condensing.
- **Weight:** 5.5 oz (156 gm).

Ordering Information

104-4EV-Q-01

ZF 104Card 486 ETH/VGA, 100MHz w/18MB DRAM and 2MB built-in flash, CompactFlash socket, 2 serial and 1 parallel port, BIOS and DOS. Does not include manuals, utility disk, cables or additional onboard flash.

104-4EV-K-01

ZF 104Card 486, ETH/VGA Development Kit, 100MHz w/18MB DRAM and 2MB built-in flash, CompactFlash socket, 2 serial and 1 parallel port, BIOS and DOS. Do include manuals, utility disk, cables or additional onboard flash.



ZF MicroSystems, Inc.

Corporate Offices

1052 Elwell Court
Palo Alto, CA 94303
USA

Tel: +1-650-965-3800

Fax: +1-650-965-4050

Email: info@zfmicro.com

<http://www.zfmicro.com>

European Offices

30, rue du Morvan, Silic 558
94643, Rungis Cédex
France

Tel : +33-(0)1-41-80-04-10

Fax : +33-(0)1-41-80-04-11